ESBWR DCD Chapter 9

Revision 0 to Revision 1 Change List

NOTES TO CHAPTER 9 CHANGE LIST

A column titled "eDRF Section" is included in this change list table to identify the eDRF Section where a specific change was originally made.

In some cases the specific file where the change was made is also given.

For editorial changes made directly into Revision 1, with no other documentation basis, the word "Editorial" appears after the eDRF Section number.

Changes in blue underlines or red strikethroughs and/or with sidebars were made after Revision 1 was verified, but before it was released. The current version of Chapter 9 is therefore termed Rev 1a.

Item	Location (e.g., subsection with paragraph/sentence/ite m, table with column/row, or figure)	Description of Change	eDRF Section
1	Cover Page	Changed Revision from 0 to 1	0000-0047-9255 Editorial
2	Cover Page	Changed Date from August to November	0000-0047-9255 Editorial
3	Cover Page	Deleted statement on conditional release	0000-0047-9255 Editorial
4	All pages except cover page	Changed page header from "Rev. 00" to "Rev. 01"	0000-0047-9255 Editorial
5	Global Abbreviations And Acronyms List	Added Term "FBFPHV" and Definition "Fuel Building Fuel Pool Area HVAC"	0000-0047-9255
6	Global Abbreviations And Acronyms List	Added Term "FBGAHV" and Definition "Fuel Building General Area HVAC"	0000-0047-9255
7	Abbreviations and Acronyms Table	Deleted "(non seismic Category I)" from entry "NS"	0000-0047-9255
8	S9.1.3	Renumbered subsections to be consistent with other sections in Chapter 9.	0000-0039-4671

9	S9.1.3.1	Changed Subsection 9.1.3.1 to System Design Basis with subheadings of Safety Design Basis and Power Generation Design Basis. Safety Design Basis is provided with information from the 1st paragraph of subsection 9.1.3.2, Safety Design Basis, of the Rev. 0 DCD. Power Generation Design Basis is provided with information	0000-0039-4671
10	S9.1.3.2, Detailed System Description	The remaining paragraphs in the original subsection 9.1.3.2 are moved to the end of Detailed System Description.	0000-0039-4671
11	S9.1.3.2, System Operation	At a location between Detailed System Description and System Operating Mode, added a new paragraph heading of System Operation with text from Subsection 9.1.3.3, Operation, of Rev. 0DCD.	0000-0039-4671
12	S9.1.3.2, System Operation	This is originally Subsection 9.1.3.1.3 of Rev. 0 DCD. Deleted the subsection number for the reason as described in the change item #1. Editorial changes to the paragraph under System Operating Mode heading.	0000-0039-4671
13	S9.1.3.2, System Operation, Alternate Shutdown Cooling Mode	Deleted the words "A and B" per Red Team Comment #141.	0000-0039-4671
14	S9.1.3.5 Instrument and Control	Deleted subsection numbers to address Red Team Comment #259	0000-0039-4671
15	Section 9.1.4.8, 1st paragraph	Added section number to NUREG to direct reader/designer to interface lifting points.	0000-0039-4881

16	Section 9.1.4.8, Dryer and Chimney Head / Separator Strong Back section	Added reference to ANSI-14.6 for clarity regarding requirements as the ANSI specification has the short and long term testing requirements.	0000-0039-4881
17	Section 9.1.4.8, Head Strongback/Te nsioner section	Added reference to ANSI-14.6 for clarity regarding requirements as the ANSI specification has the short and long term testing requirements.	0000-0039-4881
18	Section 9.1.4.15, Paragraphs titled Chimney Head / Separator Removal,	Revised name of strongback and revised COL information to direct the reviewer/designer to the appropriate standard, rather than highlight one of many requirements [load testing] in the standard that must be complied with during design, manufacturing, testing, and usage.	0000-0039-4881
19	Section 9.1.5.1	Added the basis information in response to the NRC request to address the generic bulletin 96-02.	0000-0039-4881
20	Section 9.1.5.2	Added the NRC Bulletin for reference and to show compliance. Added NUREG since it is one of the references in the SRP-9.1.5 that was conspicuously absent in the list of codes and standards listed in this section.	0000-0039-4881
21	Section 9.1.5.5	Revised section on Reactor Building Crane to correct coverage.	0000-0039-4881
22	Section 9.1.6.2	Deleted the section on testing and replaced it with the original input that addressed the guidelines specified in NUREG-0612, Section 5.1.1 that were salient to the handling of heavy loads by the overhead crane.	0000-0039-4881
23	Table 9.1-4	Update to correct location of equipment from Reactor Building to Fuel Building.	0000-0039-4881
24	Table 9.1-5	Updated to include NUREG-0554	0000-0039-4881
25	S9.2.1.1, 1 st para.	Deleted "Therefore, there is no safety design basis."	0000-0047-9255
26	S9.2.1.2	Deleted numbering of subsections under System Description	0000-0047-9255 Editorial

27	S9.2.1.2, 1 st para.	Added clarifying statement about portions of PSWS that are not considered part of the ESBWR Standard Plant.	0000-0047-9255
28	S9.2.1.2, 2 nd para.	Deleted redundant information based on clarifying statement added above.	0000-0047-9255
29	S9.2.1.4, 3 rd para.	Deleted "on" in two places.	0000-0047-9255 Chapter 9 Review Part 1 .pdf
30	S9.2.1.4, 8 th para.	Deleted "to"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
31	S9.2.1.5- S9.2.1.7	Renumbered as S9.2.1.3-S9.2.1.5	0000-0047-9255 Editorial
32	S9.2.1.7, 5 th para.	Replaced "annunciatedalarmed" with "annunciated"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
33	S9.2.7.1, 1 st para.	Deleted "and"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
34	S9.2.7.1, 3 rd para.	Deleted "of"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
35	S9.2.7.1, 5 th para.	Deleted "containment"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
36	S9.2.7.2	Deleted numbering on headings "Summary Description", "Detailed NICWS Description" and "Detailed BOPCWS Description"	0000-0047-9255
37	S9.2.7.3, 2 nd par, 2 nd sent.	The words "and a more detailed figure is shown in Figure 9.2-3" are deleted.	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
38	S9.2.7.4, Detailed NICWS Description, 1st para., 2nd to last sentence	Correction of the text regarding number of chemical addition tanks: "A common chemical feed tank for each both loops is installed in parallel with the loads for corrosion inhibitor addition to the chilled water."	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
39	S9.2.7.4, 1 st	Deleted "conditioning"	0000-0047-9255

	bullet		Chapter 9 Review Part 1 .pdf
40	S9.2.7.4, 7 th bullet	Deleted ", and"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
41	S9.2.7.4, 8 th bullet	Deleted ","	0000-0047-9255 Chapter 9 Review Part 1 .pdf
42	S9.2.7.5, 1 st para.	Changed "buses" to "bus"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
43	S9.2.7.5, 3 rd bullet	Deleted ", and"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
44	S9.2.7.6- S9.2.7.8	Renumbered subsections as 9.2.7.3-9.2.7.5	0000-0047-9255
45	S9.2.8.1, 8 th para.	Deleted "tube" from "in the event a tube leak occurs"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
46	S9.2.8.2	Deleted numbering on headings "Summary Description" and "Detailed Description"	0000-0047-9255
47	S9.2.8.5- S9.2.8.7	Renumbered subsections as 9.2.8.3-9.2.8.5	0000-0047-9255
48	T9.2-2, 7 th row from top	Fixed hyphen	0000-0047-9255 Chapter 9 Review Part 1 .pdf
49	T9.2-3	Deleted extra table heading for Table 9.2-3	0000-0047-9255 Chapter 9 Review Part 1 .pdf
50	T9.2.11	Values are updated according to BV inputs (BVGE-SR3-2005-0230, Chilled Water Loads)	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
51	T9.2-11, comment beneath Table	Deleted period after asterisk	0000-0047-9255 Chapter 9 Review Part 1 .pdf
52	F9.2-1	Replaced Figure	0000-0047-9255 Editorial
53	F9.2-2	Added Figure for RCCWS as Figure 9.2-2. Chilled water system becomes Figure 9.2-3.	0000-0047-9255

54	F9.2-3, sheets 1-6	CWS becomes figure 9.2-3. Deleted sheets 1-6 and replaced with one simplified diagram.	0000-0047-9255
55	F9.2-4	Repositioned Figure Title	0000-0047-9255 Editorial
56	S9.3.2.2	Deleted Heading Numbering on Summary Description	0000-0047-9255 Editorial
57	S9.3.2.2	Deleted Heading Numbering on Detailed System Description	0000-0047-9255 Editorial
58	S9.3.2.3	Changed Heading Number from 9.3.2.5 to 9.3.2.3	0000-0047-9255 Editorial
59	S9.3.2.3, 2 nd bullet	Deleted "or" at end of sentence	0000-0047-9255 Chapter 9 Review Part 1 .pdf
60	S9.3.2.4	Changed Heading Number from 9.3.2.6 to 9.3.2.4	0000-0047-9255 Editorial
61	S9.3.2.5	Changed Heading Number from 9.3.2.7 to 9.3.2.5	0000-0047-9255 Editorial
62	S9.3.2.5, 1 st bullet	Deleted period at end of sentence	0000-0047-9255 Chapter 9 Review Part 1 .pdf
63	S9.3.2.5, 3 rd bullet	Deleted period at end of sentence	0000-0047-9255 Chapter 9 Review Part 1 .pdf
64	S9.3.2.5, 5 th bullet	Deleted period at end of sentence	0000-0047-9255 Chapter 9 Review Part 1 .pdf
65	S9.3.3	Changed Subsection Title from "Equipment and Floor Drainage System" to "Equipment and Floor Drain System"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
66	S9.3.3, 1 st sent.	Changed "Drainage" to "Drain"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
67	S9.3.3, 4 th bullet	Deleted "and" at end of text	0000-0047-9255 Chapter 9 Review Part 1 .pdf
68	S9.3.3, 5 th bullet	Deleted period at end of text	0000-0047-9255 Chapter 9 Review Part 1 .pdf

69	S9.3.3.1, 3 rd para.	Deleted ";" after "overflowing"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
70	S9.3.3.2, 12 th para.	Deleted "Radioactive" from "Liquid Radioactive Waste Management System"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
71	S9.3.3.2, 14 th para.	Deleted "Radioactive" from "Liquid Radioactive Waste Management System"	0000-0047-9255 Chapter 9 Review Part 1 .pdf
72	S9.3.3.5, 2 nd bullet	Deleted "and" from end of text	0000-0047-9255 Chapter 9 Review Part 1 .pdf
73	S9.3.5.1, 1st Para, 1st sent.	Deleted "Although".	0000-0047-1073
74	S9.3.5.1, 1st Para, 1st sent.	Deleted "no design basis".	0000-0047-1073
75	S9.3.5.2, 1st Para, 2nd sent.	Deleted "events beyond the safety design basis, such as an".	0000-0047-1073
76	S9.3.5.2, 4th Para, 1st sent.	Deleted "the following", "subsystem:".	0000-0047-1073
77	S9.3.5.2, 4th Para, 1st sent.	Added "that".	0000-0047-1073
78	S9.3.5.2, 4th Para, 1st sent.	Replaced "including" with "includes".	0000-0047-1073
79	S9.3.5.2, 5th Para, 1st sent.	Deleted the entire sentence.	0000-0047-1073
80	S9.3.5.2, 6th Para, 1st sent.	Deleted "to ensure proper equipment operation and".	0000-0047-1073
81	S9.3.5.2, 6th Para, 1st sent.	Replaced "avoidance" with "avoids".	0000-0047-1073
82	S9.3.5.2, 6th Para, 1st sent	Deleted "of".	0000-0047-1073
83	S9.3.5.2, 7th Para, 3 rd and 4th sent.	Deleted both sentences entirely.	0000-0047-1073
84	S9.3.5.2, 9th Para, 1st sent.	Deleted "than"	0000-0047-1073
85	S9.3.5.2, 12th	Deleted "only".	0000-0047-1073

	Para, 1st sent.		
86	S9.3.5.2, 12th Para, 2nd sent.	Deleted "only".	0000-0047-1073
87	S9.3.5.2, 17th Para, 1 st Bullet.	Deleted "; and".	0000-0047-1073
88	S9.3.5.2, 17th Para, 2nd Bullet.	Deleted "." At the end of sentence.	0000-0047-1073
89	S9.3.5.2, 18th Para, 1st Sent.	Replaced "SLCS" with "SPBS".	0000-0047-1073
90	S9.3.5.2, 18th Para, 1st Sent.	Deleted "initiation"	0000-0047-1073
91	S9.3.5.2, 18th Para, 1st Sent.	Added "." After hot shutdown.	0000-0047-1073
92	S9.3.5.2, 18th Para, 1st Sent.	Deleted "with".	0000-0047-1073
93	S9.3.5.2, 18th Para, 1st Sent.	Replaced "subsequent" with "Subsequent".	0000-0047-1073
94	S9.3.5.2, 18th Para, 1st Sent.	Deleted "to".	0000-0047-1073
95	S9.3.5.3, 1st Para, 2nd Sent.	Deleted "Because of the".	0000-0047-1073
96	S9.3.5.3, 1st	Added "A" Before large.	0000-0047-1073
	Para, 2nd Sent.		
97	S9.3.5.3, 1st	Revised "reactor and the redundant" to "reactor	0000-0047-1073
	Para, 2nd Sent.	including redundant".	
98	S9.3.5.3, 1st	Revised "at any time in core life the use of	0000-0047-1073
	Para, 2nd Sent.	the SLCS for safety reasons is not expected over	
		the life of the plant." to "at any time during	
		the core life."	
99	S9.3.5.3, 4th Para, 1st Sent.	Revised from "7600" to "760".	0000-0047-1073
100	S9.3.5.3, 4th Para, 2nd	Revised from "7600" to "760".	0000-0047-1073

	Sent.		
101	S9.3.5.3, 8th Para, 2nd Sent	Deleted the entire sentence.	0000-0047-1073
102	S9.3.5.3, 20th Para, 1st and 2nd Sent, pg 9.3-66.	Deleted both sentences entirely.	0000-0047-1073
103	S9.3.5.3, 20th Para, 3rd Sent.	Deleted "," after events.	0000-0047-1073
104	S9.3.5.3, 20th Para, 4th Sent.	Deleted "non design basis".	0000-0047-1073
105	S9.3.5.3, 21st Para, 1st Sent.	Revised from "SLCS is a system requiring" to "SLCS requires".	0000-0047-1073
106	S9.3.5.3, 21st Para, 1st Sent.	Revised from "trainloop" to "train".	0000-0047-1073
107	S9.3.5.3, 23rd Para, 1st Sent.	Deleted "the" twice.	0000-0047-1073
108	S9.3.5.3, 25 Para, 3rd and 4th Sent.	Deleted both sentences entirely.	0000-0047-1073
109	S9.3.6.2, 6 th para.	Deleted "from the outside atmosphere"	0000-0047-9255
110	S9.3.7.2, 6 th para. 1 st sent.	Deleted "50% capacity"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
111	S9.3.7.2, 6 th para. 2 nd sent.	Deleted "ANSI"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
112	S9.3.7.2, 8 th para.	Deleted "from the outside atmosphere"	0000-0047-9255
113	S9.3.7.2, 9 th para.	Deleted "ANSI/"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
114	S9.3.7.2, 10 th para. Last	Deleted ", turbine, and Radwaste" Replaced "reactor" with "Reactor" and deleted "s" in	0000-0047-9255 Chapter 9 Review Part 2

	sent.	"Buildings"	.pdf
115	S9.3.8.1, 2 nd para	Deleted "is designed to the following design bases: D"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
116	S9.3.8.1, 4 th para	Deleted "the HPNSS loads to"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
117	S9.3.8.2	Deleted numbering on Subsection headings "Summary Description" and "Detailed System Description"	0000-0047-9255 Editorial
118	\$9.3.8.5- \$9.3.8.7	Renumbered Susbsections to S9.3.8.3-S9.3.8.5.	0000-0047-9255 Editorial
<u>118a</u>	S9.3.9 new 1 st para.	Added text "The ESBWR Standard Plant design includes the capability to connect a Hydrogen Water Chemistry System (HWCS), but the system itself is not part of the ESBWR Standard Plant design."	0000-0047-9255 Rev 1
<u>118b</u>	S9.3.9.1 (safety design basis) 1 st sent.	Replaced "Hydrogen Water Chemistry System (HWCS)" with "HWCS"	0000-0047-9255 Rev 1
<u>118c</u>	S9.3.9.1 (safety design basis) new 2 nd sent.	Added sentence "Therefore, the HWCS has no safety design basis."	0000-0047-9255 Rev 1
<u>118d</u>	S9.3.9.1 (safety design basis) 3 rd sent.	Changed "requirement of using hydrogen gas" to "requirements for using hydrogen gas"	0000-0047-9255 Rev 1
<u>118e</u>	S9.3.9.1 (safety design basis) last sent.	Deleted entire sentence.	0000-0047-9255 Rev 1
<u>118f</u>	S9.3.9.1 (Power Generation Design Basis) 1st para.	Replaced entire paragraph with "Provisions are made to permit installation of a system for adding hydrogen to the feedwater at the suction of the feedwater pumps. If experience shows it necessary, a hydrogen water injection system can be added later in plant life as a COL Holder option."	0000-0047-9255 Rev 1
<u>118g</u>	S9.3.9.1 (Power Generation	Deleted entire paragraph.	0000-0047-9255 Rev 1

	Design Basis) 2 nd para.		
119	S9.3.9.1, 1 st para.	Revised "non-safety-related" to "nonsafety-related"	0000-0047-9255 Editorial
120	S9.3.9.2, 1 st sent.	Deleted ", systems"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
121	S9.3.9.2, 2 nd para, 1 st sent.	Deleted "is"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
122	S9.3.9.2, 2 nd para, 2 nd and 3 rd sent.	Deleted both sentences entirely.	0000-0047-9255 Chapter 9 Review Part 2 .pdf
123	S9.3.9.2, 2 nd para, 4 th sent.	Deleted "HWCS"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
<u>123a</u>	S9.3.9.2 2 nd para	Replaced both instances of "COL applicant" with "COL Applicant/Holder". Deleted entire last sentence.	0000-0047-9255 Rev 1
124	S9.3.9.2, 3 rd para, 1 st sent.	Deleted entire sentence.	0000-0047-9255 Chapter 9 Review Part 2 .pdf
<u>124a</u>	S9.3.9.2 1 st para, 2 nd sent.	Deleted entire sentence.	0000-0047-9255 Rev 1
<u>124b</u>	S9.3.9.3 new last sentence	Added text "The means for storing and handling hydrogen utilize the guidelines in EPRI report "Guidelines for Permanent BWR Hydrogen Water Chemistry Installations." (Reference 9.3-2)"	0000-0047-9255 Rev 1
<u>124c</u>	S9.3.9.4 1 st para.	Replaced entire paragraph with "The HWCS, if necessary, can be installed at the connection points provided. The COL Applicant/Holder shall provide the inspection and testing requirements."	0000-0047-9255 Rev 1
<u>124d</u>	S9.3.9.5 1 st para.	Added new 1 st sentence: "The necessary instrumentation can be provided to control the injection of hydrogen and augment the injection of oxygen." Kept 2 nd sentence and deleted the rest of the text in this subsection.	0000-0047-9255 Rev 1
125	\$9.3.9.5, 5 th bullet	Deleted "; and"	0000-0047-9255 Chapter 9 Review Part 2

			.pdf
126	\$9.3.9.5, 6 th	Deleted period at end of text.	0000-0047-9255
	bullet	•	Chapter 9 Review Part 2 .pdf
127	\$9.3.9.5, 7 th	Deleted ";"	0000-0047-9255
	bullet		Chapter 9 Review Part 2 .pdf
128	\$9.3.9.5, 10th	Deleted "; and"	0000-0047-9255
	bullet		Chapter 9 Review Part 2 .pdf
129	\$9.3.9.5, 17th	Deleted "; and"	0000-0047-9255
	bullet		Chapter 9 Review Part 2 .pdf
130	\$9.3.9.5, 18 th	Deleted period at end of text.	0000-0047-9255
	bullet		Chapter 9 Review Part 2 .pdf
131	S9.3.10.1	Changed "Oxygen Injection System" to "OIS"	0000-0047-9255
			Chapter 9 Review Part 2 .pdf
<u>131a</u>	<u>\$9.3.11 new</u>	Added text "The ESBWR Standard Plant	<u>0000-0047-9255</u>
	1 st para.	design includes the capability to connect a Zinc Injection System (ZIS), but the system itself is	Rev 1
		not part of the ESBWR Standard Plant design."	
<u>131b</u>	<u>\$9.3.11.1,</u>	Replaced "Zinc Injection System (ZIS)" with	0000-0047-9255
	safety design bases	<u>"ZIS"</u>	<u>Rev 1</u>
131c	S9.3.11.1,	Deleted entire sentence.	0000-0047-9255
	power		Rev 1
	generation design bases,		
	last sent.		
<u>131d</u>	<u>S9.3.11.2</u>	Replaced "applicant" with "Applicant/Holder"	0000-0047-9255
			<u>Rev 1</u>
<u>131e</u>	<u>S9.3.11.5 title</u>	Added "and Controls"	<u>0000-0047-9255</u> <u>Rev 1</u>
132	S9.3.11.1	Deleted ":" after "Power Generation Design	0000-0047-9255
		Bases"	Chapter 9 Review Part 2 .pdf
133	S9.3.12.2	Deleted numbering on Subsection headings	0000-0047-9255
		"General Description" and "Component Description"	Editorial

134	S9.3.12.5- S9.3.12.7	Renumbered Susbsections to S9.3.12.3-S9.3.12.5.	0000-0047-9255
<u>134a</u>	S9.3.13.3	Deleted "hydrogen water chemistry system and the" and "s 9.3.9 and"	0000-0047-9255 Rev 2
<u>134b</u>	<u>\$9.3.14</u>	Added new reference "9.3-2 Electric Power Research Institute, "Guidelines for Permanent BWR Hydrogen Water Chemistry Installations," EPRI Report NP-5283-SR-A, 1987."	0000-0047-9255 Rev 1
135	T9.3-2, Control Building clean area floor drains	Changed quantity of Tanks or Sumps from 1 to 2.	0000-0041-6049 Rev 1
136	T9.3-2, Control Building clean area floor drains	Changed quantity of pumps from 2 to 4 and added statement "(2 per sump)"	0000-0041-6049 Rev 1
137	T9.3-5, 3 rd row under Parameter	Deleted "injection"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
138	F9.3-2	Replaced with updated figure	0000-0047-9255 Chapter 9 Review Part 2 .pdf
139	F9.3-3	Replaced with updated figure	0000-0047-9255 Chapter 9 Review Part 2 .pdf
140	S9.4.1.1, 6 th para.	Deleted "criteria"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
141	S9.4.1.1, 14 th para.	Deleted "temperature within 8.3C of"	0000-0047-9255 Chapter 9 Review Part 2 .pdf
142	S9.4.1.1, Power Generation Design Bases, 11 th , 12 th and 15 th bullets	Deleted bullets entirely.	0000-0047-9255 Chapter 9 Review.pdf
143	S9.4.2.1,	Deleted extra space between "Pool Surface"	0000-0047-9255

	Power Generation Design Bases, 8 th bullet		Chapter 9 Review.pdf
144	S9.4.2.2, 1 st para	Added "the Fuel Building General Area HVAC (FBGAHV)" and "the Fuel Building and the Fuel Building Fuel Pool Area HVAC (FBFPHV)" in place of "FBGAHV" and "FBFPHV" respectively.	0000-0047-9255
145	S9.4.2.2, 3 rd para, 8 th sent.	Deleted extra period at end of sentence.	0000-0047-9255 Chapter 9 Review Part 2 .pdf
146	S9.4.3.5, 2 nd bullet	Deleted "," after parameters and "," at end of text	0000-0047-9255 Chapter 9 Review Part 2 .pdf
147	S9.4.3.5, 3 rd bullet	Deleted ";" at end of text	0000-0047-9255 Chapter 9 Review Part 2 .pdf
148	S9.4.3.5, 4 th bullet	Deleted "; and" at end of text	0000-0047-9255 Chapter 9 Review Part 2 .pdf
149	S9.4.3.5, 5 th bullet	Deleted period at end of text	0000-0047-9255 Chapter 9 Review Part 2 .pdf
150	S9.4.4, 1 st par.	Changed "system (TBHV)" to "(TBHV) system"	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
151	S9.4.4.1, Power Generation Design Bases, 5 th bullet.	Deleted "; and" at end of text.	0000-0047-9255
152	S9.4.4.1, Power Generation Design Bases, 8 th bullet.	Converted 8 th bullet to paragraph	0000-0047-9255
153	S9.4.4.2	Deleted numbering on Subsection headings "Summary Description", "Detailed System Description" and "System Operation"	0000-0047-9255 Editorial
154	S9.4.4.2, 7 th	Deleted entire sentence (paragraph).	0000-0047-9255

	para.		
155	S9.4.4.2, TBAS subsystem, 3 rd para.	Deleted extra period at end of sentence.	0000-0047-9255 Chapter 9 Review Part 3 .pdf
156	S9.4.4.2, TBE subsystem, 1 st para. 2 nd sent.	Deleted space before period at end of sentence.	0000-0047-9255 Chapter 9 Review Part 3 .pdf
157	S9.4.4.2, TBE subsystem, 4 th para. 2 nd sent.	Deleted second period.	0000-0047-9255 Chapter 9 Review Part 3 .pdf
158	S9.4.4.2, TBCE subsystem, 1 st para.	Deleted " (H8)"	0000-0047-9255 Chapter 9 Review Part 3 .pdf
159	S9.4.4.2, under LOPP heading, 1 st sent.	Corrected hyphenation of nonsafety-related.	0000-0047-9255 Chapter 9 Review Part 3 .pdf
160	S9.4.4.4, 2 nd par.	The following sentence is added at end of paragraph: "In locations near the ocean, the pneumatically operated damper could be substituted by variable speed motors on the supply fans."	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
161	S9.4.4.6- S9.4.4.8	Renumbered Susbsections to S9.4.4.3-S9.4.4.5.	0000-0047-9255
162	S9.4.6.2, 7 th para, 1 st sent.	Deleted period after "and."	0000-0047-9255 Chapter 9 Review Part 3 .pdf
163	S9.4.6.4, 2 nd para.	Deleted "(Dioctyl phthalate) "	0000-0047-9255 Chapter 9 Review Part 3 .pdf
164	S9.4.7, 1 st sent.	Deleted "ACS" in "(EBHVACS)"	0000-0047-9255 Chapter 9 Review Part 3 .pdf
165	S9.4.7.1, 1 st sent.	Deleted "ACS" in "EBHVACS"	0000-0047-9255 Chapter 9 Review Part 3 .pdf
166	S9.4.7.1, TSC HVAC subsystem	TSC HVAC subsystem (3 rd bullet) is replaced by: "Detects and limits the introduction of airborne	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov

	(3 rd bullet)	hazardous materials (radioactivity, smoke, chlorine gas or other site-specific toxic gas) into the TSC"	2005.pdf
167	S9.4.7.2, 1 st sent.	Deleted "ACS" in "EBHVACS"	0000-0047-9255 Chapter 9 Review Part 3 .pdf
168	S9.4.7.2, Last sent.	Deleted "ACS" in "EBHVACS"	0000-0047-9255 Chapter 9 Review Part 3 .pdf
169	S9.4.7.2	Deleted Subsection numbering from heading "System Operation"	0000-0047-9255 Editorial
170	S9.4.7.2.1, 3 rd par, 4 th sent.	Changed "air handing" to "air-handling"	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
171	S9.4.7.2.1, 3 rd par, 5 th sent.	Sentence is replaced by: "Building air is returned/exhausted by two redundant fans."	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
172	S9.4.7.2.1, 3 rd par.	The following sentence is added at end of paragraph: "Dedicated exhaust fans are provided for the battery rooms."	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
173	S9.4.7.2.1, 4 th par.	The following corrections are included: "The TSC HVAC subsystem is a recirculating ventilation system to provide filtered (heated or cooled) and humidified air to the TSC. Two supply fans and filtration units with high efficiency particulate air (HEPA) filters and charcoal filters remove airborne hazardous radioactive materials and when required. supply The supply fans provide fresh air to the TSC to augment the return air to maintain the TSC under slight positive pressure. The recirculating system includes redundant air conditioning units (with air mixing plenum, filters, heating and cooling coils, and humidifier) and recirculating fans to provide conditioned air through ducts, dampers, and registers to the TSC. The exhaust system includes redundant fans to direct the air from the kitchen and toilet areas into the atmosphere."	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf

174	S9.4.7.2, 6 th par.	Changed "air handing" to "air-handling" in two places	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
175	S9.4.7.2, EER HVAC Subsystem, 1 st par.	The following corrections are included: "One of the two air supply fans of each train is normally operating to supply filtered, temperature-controlled air to the Electrical Building. The second fan is a standby unit that starts automatically upon failure of the operating fan. One of the two air return/exhaust fans of each train is normally also operating to extract air from battery rooms. The second fan is a standby unit that starts automatically upon failure of the operating fan. Each fan is provided with backdraft isolation dampers. The EER HVAC subsystem uses 100% outside air when the outside air temperature is moderate to maintain the minimum operating cost. The EER HVAC subsystem modulates the intake, return and outside exhaust air dampers to maximize the control of the inside air temperature using the outside air to-minimize the energy used for either cooling by the chilled water system or heating by the plant heating system. In extreme outside air temperature conditions (either high or low), the outside air intake dampers are at their minimum position."	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
176	S9.4.7.2, TSC HVAC Subsystem, 2 nd par.	The following corrections are included: "The filtration unit fans do not operate during normal operation. The TSC HVAC subsystem automatically transfers from its normal operation mode to its radiological mode upon detection of radioactivity at the outside air intakes."	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
177	S9.4.7.2, Smoke Removal Operating Mode, 2 nd par.	The words "the ventilation" are deleted and "air handing" changed to "air-handling"	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
178	S9.4.7.2	New paragraph is added at end of subsection: "Radiological Event Operation (TSC HVAC subsystem only)	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf

		Upon detection of outside air high radiation signal a filtration unit fan starts automatically	2005.pdf
		and opens its normally closed isolation damper. The signal also closes the filtration unit damper and the exhaust air dampers."	
179	S9.4.7.3, 1 st and 2 nd sent.	Deleted "ACS" in "EBHVACS"	0000-0047-9255 Chapter 9 Review Part 3 .pdf
180	S9.4.7.4, 1 st para.2 nd sent.	Deleted extra return.	0000-0047-9255 Chapter 9 Review Part 3 .pdf
181	S9.4.7.4, 1 st para.2 nd sent.	Deleted "all" before "instruments"	0000-0047-9255 Chapter 9 Review Part 3 .pdf
182	S9.4.7.4, Last para.	Deleted "ACS" in "EBHVACS"	0000-0047-9255 Chapter 9 Review Part 3 .pdf
183	S9.4.7.5, 1st para.	Deleted "ACS" in "EBHVACS"	0000-0047-9255 Chapter 9 Review Part 3 .pdf
184	S9.4.7.5, 3 rd bullet	Deleted extra space at end of text	0000-0047-9255 Chapter 9 Review Part 3 .pdf
185	S9.4.7.5, 4 th bullet	Deleted "and" at end of text	0000-0047-9255 Chapter 9 Review Part 3 .pdf
186	S9.4.7.5, Last bullet	Deleted period at end of text	0000-0047-9255 Chapter 9 Review Part 3 .pdf
187	S9.1.8, Drywell Cooling System	Renumbered Subsection from 9.1.8 to 9.4.8. Also updated all appropriate subheading numbering.	0000-0047-9255
188	S9.1.8, Drywell Cooling System	Deleted EA annotation	0000-0047-9255
189	S9.4.6.6, Drywell Cooling System, 2 nd bullet	Deleted "reactor" from "hot reactor shutdown"	0000-0047-9255 Chapter 9 Review Part 3 .pdf

190	S9.4.6.7, 1 st para, 2 nd sent.	Deleted extra period	0000-0047-9255 Chapter 9 Review Part 3
191	S9.4.6.7, 8 th para, 1 st sent.	Deleted extra space between "CWS independently"	.pdf 0000-0047-9255 Chapter 9 Review Part 3 .pdf
192	S9.4.7, Containment Inerting System	Renumbered Subsection from 9.4.7 to 9.4.9. Also updated all appropriate subheading numbering.	0000-0047-9255 Chapter 9 Review Part 3 .pdf
193	S9.4.7, Containment Inerting System	Deleted the word "primary" when referring to containment throughout this subsection.	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
194	S9.4.9.2, 3 rd par, 1 st sent.	The words: ", a dedicated containment overpressure relief line" are deleted	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
195	S9.4.8 and S9.4.9	Renumbered Subsection and subheadings to S9.4.10 and S9.4.11 respectively.	0000-0047-9255 Editorial
196	T9.413	Air flow, water flow and cooling capacity are preliminary. The values are quoted between [] and the cooling capacity units are changed to kW	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
197	T9.413	The following footnote is added (refer to FCU data at upper and lower drywell): "Design for only one FCU in operation with two fans working."	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
198	T9.4-14	The Drywell Cooling System Heat Loads are preliminary. The values are quoted between [] and the units are changed to kW	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
199	F9.4-1	Replaced with more legible figure	0000-0047-9255
200	F9.4-2	Replaced with more legible figure	0000-0047-9255
201	F9.4-3	Replaced with more legible figure	0000-0047-9255
202	F9.4-4	Replaced with more legible figure	0000-0047-9255
203	F9.4-5	Replaced with more legible figure	0000-0047-9255
204	F9.4-6	Replaced with more legible figure	0000-0047-9255
205	F9.4-7	Replaced with more legible figure	0000-0047-9255

206	F9.4-8	The figure title is updated with the correct acronym	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
207	F9.4-8	The figure is replaced by the simplified system figure	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
208	F9.4-9	Replaced with more legible figure	0000-0047-9255
209	F9.4-10	Replaced with more legible figure	0000-0047-9255
210	F9.4-11	Replaced with more legible figure	0000-0047-9255
211	F9.4-12	The figure is replaced by the simplified system figure	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
212	F9.4-13	The figure is updated and simplified	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov 2005.pdf
213	F9.4-14	The figure is updated and simplified	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
214	S9.5.1.4, Fire Pumps, 4 th para.	Replaced "is site specific" with "may be new or existing"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
215	S9.5.1.9, 1 st sent.	Deleted "all"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
216	S9.5.1.9, 3 rd para.	Replaced "isare" with "is"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
217	S9.5.1.12, 5 th para.	Deleted last sentence entirely.	0000-0047-9255 Chapter 9 Review Part 4 .pdf
218	S9.5.1.12, 6 th para.	Replaced "SPLB 9.5.1" with "SPLB 9.5-1"	0000-0041-2715 Rev 1
219	S9.5.1.12.1	Added entire Subsection and subheadings 9.5.1.12.1.1-9.5.1.12.1.6	0000-0041-2715 Rev 1
220	S9.5.1.14, Instrumentati on for the Fire	Replaced "All instrumentation" with "Instrumentation"	0000-0047-9255 Chapter 9 Review Part 4 .pdf

	Detection System, 3 rd para.		
221	S9.5.2.2, 5 th para	Deleted "/" in "DCI/S"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
222	S9.5.2.2, 5 th para	Deleted extra return and combined 5 th and 6 th sentences.	0000-0047-9255 Chapter 9 Review Part 4 .pdf
223	S9.5.2.2, 6 th para	Deleted "licensing"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
224	S9.5.2.2, 7 th bullet	Deleted ";"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
225	S9.5.2.2, 10 th bullet	Deleted "; and" at end of text and	0000-0047-9255 Chapter 9 Review Part 4 .pdf
226	S9.5.2.2, 10 th bullet	Changed "Electric" to "Electrical"	0000-0047-9255
227	S9.5.2.2, 12 th bullet	Deleted "; and"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
228	S95.2.2, 15 th bullet	Deleted period at end of text	0000-0047-9255 Chapter 9 Review Part 4 .pdf
229	S9.5.2.2, Plant Radio System	Deleted "and" after "Health Physics"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
230	S9.5.2.2, Plant Radio System	Deleted period after "(or Unassigned)"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
231	S9.5.2.2, Emergency Communicati on Systems, 2 nd bullet	Deleted "and" at end of text.	0000-0047-9255 Chapter 9 Review Part 4 .pdf
232	S9.5.2.2, Emergency Communicati on Systems,	Replaced "CMEB" with "SPLB" and "9.5.1" with "9.5-1"	0000-0041-2715 Rev 1

	3 rd bullet		
233	S9.5.2.5	Deleted section entirely	0000-0047-9255 Chapter 9 Review Part 4 .pdf
234	S9.5.3.3 1 st para.	Deleted extra space at end of sentence	0000-0047-9255 Chapter 9 Review Part 4 .pdf
235	S9.5.3.4, 1 st para.	Changed "Table 9.5-32" to "Table 9.5-3"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
236	S9.5.3.4, 5 th bullet	Deleted "and"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
237	S9.5.3.4, 8 th bullet	Deleted "and"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
238	S9.5.3.4, Normal Lighting System Description, 1st para.	Deleted extra period at end of second sentence.	0000-0047-9255
239	S9.5.3.4, Normal Lighting System Description, 3 rd para.	Changed "Table 9.5-32" to "Table 9.5-3"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
240	S9.5.3.4, Standby Lighting System Description, 6 th bullet	Deleted "and"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
241	S9.5.3.4, Emergency Lighting System Description, 1st bullet	Deleted "and"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
242	S9.5.3.5, 4 th par, 1 st sent.	"two minutes" is replaced by "one minute"	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_Nov

			2005.pdf
<u>242a</u>	S9.5.3 Control Room Emergency Lighting, 1st sent.	Replaced "four divisions" with "two divisions" and added "72-hour" in front of "Class 1E Uninterruptible AC power"	0000-0047-9255 Rev 1
<u>242b</u>	S9.5.3 Control Room Emergency Lighting, 2 nd sent.	Added "72-hour" in two places, in front of "Class 1E batteries" and "Class 1E UPS.'	0000-0047-9255 Rev 1
<u>243c</u>	S9.5.3 Control Room Emergency Lighting, 4 th sent.	Replaced "two out of four" with "one out of two"	0000-0047-9255 Rev 1
<u>243d</u>	<u>\$9.5.3.4</u>	Changed COL reference from 9.5.3.5 to 9.5.9.3	0000-0047-9255 Rev 2
243	S9.5.4.2, 6 th par, 4 th sent.	"issued" is replaced by "is used"	0000-0047-9255 DCD_Chapter_09_Rev0 1_EA_Annotations_No v2005.pdf
244	S9.5.3.7	Deleted entire Subsection	0000-0047-9255 Chapter 9 Review Part 4 .pdf
<u>243a</u>	S9.5.4.2 1 st para. 2 nd sent	Changed COL reference from 9.5.10 to 9.5.9.4	0000-0047-9255 Rev 2
245	S9.5.4.2, 1 st para	Deleted info in parenthesis at end of sentence.	0000-0047-9255 Chapter 9 Review Part 4 .pdf
246	S9.5.4.2, 6 th para	Deleted 4 th sentence entirely	0000-0047-9255 Chapter 9 Review Part 4 .pdf
247	S9.5.4.3, 2 nd sent.	Deleted "and" before "are protected"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
<u>247a</u>	S9.5.5.2 1 st para. 2 nd sent.	Added "(See Subsection 9.5.9.4 for COL information)"	0000-0047-9255 Rev 2
248	S9.5.5.2, 1 st sent.	Deleted "waste" before "water system"	0000-0047-9255 Chapter 9 Review Part 4 .pdf

249	S9.5.5.2, System Operation, 1 st sent.	Deleted space before comma after "(120F)"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
<u>249a</u>	S9.5.6.2 2 nd para. 2 nd sent.	Changed COL reference from 9.5.10 to 9.5.9.4	0000-0047-9255 Rev 2
250	S9.5.7.1, Power Generation Design Bases, 2 nd sent.	Deleted "meets the following design bases"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
<u>250a</u>	S9.5.7.2 2 nd para. 2 nd sent.	Changed COL reference from 9.5.10 to 9.5.9.4	0000-0047-9255 Rev 2
251	S9.5.7.2, Detailed System Description, 2 nd para.	Deleted "s" from "heat exchangers"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
<u>251a</u>	S9.5.8.2 2 nd para. 2 nd sent.	Changed COL reference from 9.5.10 to 9.5.9.4	0000-0047-9255 Rev 2
252	S9.5.9.1, 1 st sent	Added "are" to "The following are"	0000-0047-9255 Editorial
253	S9.5.9.1, 1 st , 4 th and 5 th bullets	Deleted entirely.	0000-0047-9255 Chapter 9 Review Part 4 .pdf
254	S9.5.9.1, 3 rd bullet	Added new third bullet "Reserve fire water storage capacity for emergency makeup for the auxiliary refueling pools and reactor water inventory control through connection to the Fuel and Auxiliary Pools Cleaning System (FAPCS)"	0000-0041-2715 Rev 1
255	S9.5.9.1, 6 th bullet	Deleted "and" before "Equipment"	0000-0047-9255 Chapter 9 Review Part 4 .pdf
256	S9.5.9.1, last bullet	Deleted extra line before next paragraph.	0000-0047-9255 Editorial
257	T9.5-32	Changed to Table 9.5-3	0000-0047-9255 Chapter 9 Review Part 4 .pdf
258	F9.5-1	Replaced with updated Figure	0000-0041-2715 Rev 1

<u>259</u> <u>F9.5-7</u>	Replaced with updated figure.	0000-0047-9255 Rev 1
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